

Patent claims

1. Method for interworking between a number of protocols, preferably a first protocol (P1) in which a first subscriber (T1) operates and a second protocol with which a second subscriber (T2) operates of a digital, multimedia communications network in which a connection between two or more subscribers includes at least one payload channel (12) in the send and receive direction,
- 5 - in which the first protocol (P1) is designed for signaling in packet-oriented or IP-based networks (N1) and for service features (16) which require a disconnection of the payload channel (12) only provides a local disconnection of the relevant payload channel (12) in the send direction and
- 10 - in which the second protocol (P2) for service features (16) which require a disconnection of the user channel (12) provides for at least the option of a local disconnection of the relevant payload channel (12) in the send direction, characterized in that
- 15 a set of service features (16) is also provided by the first subscriber (T1), preferably those service features (16) which require a disconnection of the relevant payload channel (12) in the send and receive direction, while the second subscriber (T2) is subject to modified control to the extent where sending in the direction of the first subscriber (T1), preferably the sending of a media stream via the relevant payload channel (12), is interrupted.
- 20
2. Method according to Claim 1,
- 25 characterized in that,
- the method for interworking between two protocols (P1, P2) is arranged in a network with the following features:

a first subscriber (T1) is implemented in accordance with the first protocol (P1) and a second subscriber (T2) in accordance with the second protocol (P2),

- a connection between the two subscribers (T1, T2) is implemented using at least one payload channel (12) in the send and receive direction,
 - in the network there is provision for at least one protocol converter (MG, MGC) which is arranged between the two protocols (P1, P2),
 - for service feature (16), the which provide for a disconnection of the network channels (12) when executed, on Initiation of the service feature (16) by the first subscriber (T1) a notification is provided in the direction of the second subscriber (T2) with the aim of interrupting the outgoing payload channel (12) of the second subscriber (T2), with the following steps:
 - (1) the protocol converter (MG, MGC) is informed that the notification was sent out by the first subscriber (T1),
 - (2) the outgoing payload channel (12) of the second subscriber (T2) is interrupted by the protocol converter (MG, MGC).
3. Method in accordance with one of the Claims 1 or 2, characterized in that,
- if second subscriber (T2) is a PSTN subscriber
 - there is provision in the network for at least one Media Gateway (MG) which is arranged between the two protocols (P1, P2) and via which, on initiation of the service feature (16) by the first subscriber (T1) a command set is output in the direction of the second subscriber (T2) to interrupt the outgoing payload channel (12) the second subscriber (T2), in which case the command set initiates at least the following events:
 - (3) the Media Gateway (MG) receives at least a notification of the sender of the command;

(4) the Media Gateway (MG) performs the interruption of the outgoing payload channel of the second subscriber (T2) either indirectly or directly.

4. Method according to Claim 3,
5 characterized in that,
in the network at least one Media Gateway Controller (MGC) is provided which is assigned to the relevant Media Gateway (MG) and that the command set for non-local interruption of the payload channel (12) is performed indirectly and is preferably processed via
10 the Media Gateway Controller (MGC).

5. Method according to Claim 4,
characterized in that,
the method uses a Media Gateway Control Protocol (MGCP) or an H.248 protocol which functions as the interface between signaling and user
15 data channel and thereby between Media Gateway (MG) and Media Gateway Controller (MGC).

6. Method in accordance with one of the previous claims,
characterized in that,
the first protocol (P1) is SIP (Session Initiation Protocol) or an
20 expansion of the SIP protocol, preferably SIP-T.

7. Method in accordance with one of the previous claims,
characterized in that,
the second protocol (P2) is a protocol in accordance with the H.323 Standard or that the second subscriber (T2) is an ISDN subscriber.

25 8. Method in accordance with one of the Claims 4 to, 7;
characterized in that,

the communication between the first protocol (P1) and the second protocol (P2) is undertaken in the interworking to a third protocol (P3) which serves as the interface for MGC-MGC communication, preferably via the BICC CS2 protocol or the ISUP+ protocol

5 9. Method in accordance with one of the previous claims, characterized in that, the service feature (16) is "Call Hold" or "Terminal Portability".

10. Method in accordance with one of the previous claims, characterized in that,

10 more than two subscribers are connected to each other.

11. Method in accordance with one of the previous claims, characterized in that,

the connection between the subscribers (T1, T2) additionally includes a signaling channel separate from the payload channel or

15 the payload channels (12) which is at least partly IP-based.

12. Method in accordance with one of the previous claims, characterized in that,

- if the second subscriber (T2) is an analog subscriber or an ISDN subscriber (in accordance with the Q.931 Standard), - instead of or

20 in addition to the Media Gateway (MG), an Integrated Access Device (IAD) and/or a Multimedia Terminal Adaptor (MTA) and/or an

Interactive Voice Response (IVR) is provided to merge all the data traffic of the subscribers and send it to the next switching center.

13. Method in accordance with one of the previous claims,
characterized in that,
the method additionally includes the following steps
the subscriber who has not initiated the service feature (12) and is
5 merely making passive use of the latter, receives a notification on
his terminal (14) as regards the execution of the service feature
(12) and/or an interruption of a media and/or payload stream.
14. Method in accordance with one of the previous claims,
characterized in that,
10 while the second protocol (P2) is expanded by a command set which
makes it possible for the relevant payload channel (12) also to be
interrupted non-locally in the receive direction in respect of the
first subscriber (T1).
15. Method in accordance with one of the previous claims,
15 characterized in that,
the interruption occurs in a terminal (14) of the H.323 subscriber
(T2) or - if the second subscriber (T2) is a PSTN subscriber - in
the Media Gateway Controller (MGC) and the Media Gateway (MG)
assigned to him.
- 20 16. Method in accordance with one of the Claims 2 to, 15;
characterized in that,
the notification is received by a protocol converter (MG, MGC)
assigned to the second subscriber (T2) and then the second
subscriber (T2) is sent a command (FACILITY) to interrupt the
25 outgoing payload channel (12) from the second subscriber, if the
second subscriber (T2) is an H.323 subscriber.

17. Protocol converter for executing on of the following methods, preferably for performing interworkings of a first protocol (P1) of a first subscriber (T1) with a second protocol (P2) of a second subscriber (T2) of a digital, multimedia communications network,

5 with

- at least one payload channel (12) between the two subscribers (T1, T2) in the send and receive direction, - in which the first protocol (P1) is arranged for signaling in packet-oriented or IP-based networks (N1) and which for service features (16) which require a
10 disconnection of the payload channel (12) only provides for a local disconnection of the relevant payload channel (12) in the send direction and - in which the second protocol (P2) for service features which require a disconnection of the payload channel (12), at least provides the option of a local disconnection of the
15 relevant payload channel (12) in the send direction, characterized in that,

the protocol converter includes means which also provide the first subscriber (T1) with a set of service features, preferably such service features (16) as require a disconnection of the relevant
20 payload channel (12) in the send and receive direction, modifying the control of the second subscriber (T2) such that transmission in the direction of the first subscriber (T1), preferably the transmission of a media stream via the relevant payload channel (12), is interrupted.

25 18. Device, preferably protocol converter for executing the method in accordance with the Claims 1 to 16.

19. Protocol converter in accordance with one of the Claims 17 or 18,

characterized in that,

30 the protocol converter includes a Media Gateway (MG) and/or of a Media Gateway Controller (MGC), if there is a PSTN/IP gateway in the network, where the communication between the Media Gateway

Controllers (MGC) is undertaken via a third protocol (P3), preferably BICC,

20. Protocol converter in accordance with at least one of the Claims 17 to 19,

5 characterized in that,

the first protocol (P1) is SIP and the second protocol (P2) is a protocol in accordance with the H.323 Standard or that the second subscriber (T2) is an analog subscriber or an ISDN subscriber.

10 21. Protocol converter in accordance with at least one of the Claims 17 to 20,

characterized in that,

the protocol converter is supplemented by an expansion unit which expands the second protocol (P2) by a command set for non-local

15 disconnection of the relevant payload channel (12) in the receive direction of the first subscriber (T1).

22. Multimedia communications network system, preferably comprising:

- a first network (N1) which is packet-oriented or IP-based and to which a first subscriber (T1) is connected who accesses a first
20 protocol (P1) which is arranged for signaling in packet-oriented or IP-based networks (N1) and for service features (16) which require a call disconnection of the payload channel (12) only provide for a local disconnection of the relevant payload channel (12) in the send direction and

25 - a second network (N2), to which a second subscriber (T2) is connected who accesses a second protocol (P2) which for service features (16) which provide for a disconnection of the payload channel (12) provide for at least the option of a local disconnection of the relevant payload channel (12) in the send
30 direction,

characterized in that,

he network system provides the first subscriber (T1) with a set of service features (16), preferably such service features (16), as require a disconnection of the relevant payload channel (12) in the send and the receive direction, by modifying the control of the

5 second subscriber (T2) to the extent that transmission in the direction of the first subscriber (T1), preferably the sending of a media stream via the relevant payload channel (12), is interrupted.

23. Arrangement, preferably multimedia communications network system, with characteristics in accordance with at least one of the
10 Claims 1 to 16, comprising a device in accordance with at least one of the Claims 17 to 21.

24. Multimedia communications network system in accordance with at least one of the Claims 22 or 23,
characterized in that,

15 the first protocol (P1) is SIP and the second protocol (P2) is a protocol in accordance with the H.323 Standard or that the second subscriber (T2) is an analog or an ISDN subscriber and that the first and the second protocol (P1, P2) are arranged for interworking with a third protocol (P3), preferably BICC.